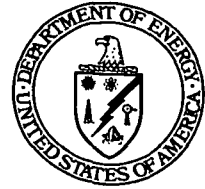




## Department of Energy

### Ohio Field Office Fernald Area Office

P. O. Box 538705  
Cincinnati, Ohio 45253-8705  
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2383

JUL 15 1999

Mr. James A. Saric, Remedial Project Manager  
U.S. Environmental Protection Agency  
Region V-SRF-5J  
77 West Jackson Boulevard  
Chicago, Illinois 60604-3590

DOE-0930-99

Mr. Tom Schneider, Project Manager  
Ohio Environmental Protection Agency  
401 East 5<sup>th</sup> Street  
Dayton, Ohio 45402-2911

Dear Mr. Saric and Mr. Schneider:

#### **TRANSMITTAL OF RESPONSES TO THE U.S. ENVIRONMENTAL PROTECTION AGENCY AND OHIO ENVIRONMENTAL PROTECTION AGENCY COMMENTS ON MODIFICATIONS TO THE ON-SITE DISPOSAL FACILITY LEACHATE CONVEYANCE SYSTEM**

- References:
- 1) Letter, J. Saric, U.S. EPA to J. Reising, DOE-FEMP, "OSDF Leachate Conveyance System," dated June 16, 1999.
  - 2) Letter, T. Schneider, OEPA to J. Reising, DOE-FEMP, "Comments on Modifications to OSDF LTS Design," dated June 7, 1999.
  - 3) Letter, J. Reising, DOE-FEMP to J. Saric, USEPA and T. Schneider, OEPA, "Modification to the On-Site Disposal Facility Leachate Conveyance System," dated May 19, 1999.

This letter serves to submit the subject responses for your review and approval (see References 1 and 2). Once your concurrence on the comment responses and associated actions is received, revised documents will be submitted in final form.

The Ohio Environmental Protection Agency (OEPA) emphasized in Reference 2 that lessons learned dictate several aspects of the Leachate Management Contingency Plan will have to change. The Fernald Environmental Management Project (FEMP) is in the process of reviewing the Leachate Management Contingency Plan to incorporate lessons learned from operations since startup including the information requested by the OEPA in Reference 2.

**RESPONSE TO U.S. ENVIRONMENTAL PROTECTION AGENCY  
TECHNICAL REVIEW COMMENT ON THE  
MODIFICATION TO THE ON-SITE DISPOSAL FACILITY  
LEACHATE CONVEYANCE SYSTEM**

**SYSTEMS PLAN**

Commenting Organization: U.S. EPA

Commentor: Saric

Section #: 3

Pg. #: 3-16

Line #: N/A

Original Comment #: 1

**Comment:** On Page 3-16 of the systems plan, the text states that "should any of the above inspections reveal systems deficiencies, the conditions shall be corrected utilizing a procedure." This sentence should be revised to also state that any corrective measure procedures that are developed will be sent to the regulatory agencies for review and approval.

**Response:** The items addressed on page 3-16 are all inspection requirements that indicate proper operation or performance of the system and it's material condition. The action to be taken for any deficiency found in the parameters examined are contained in FDF Standard Operating and Operations Administration procedures (Standing Orders). As described in the response to Ohio EPA Comment 21, the sentence will be reworded to state, "Should any ..... utilizing approved FDF Operations, Maintenance and Administrative procedures." Ohio EPA Comment 19 states that if major repairs are needed to the LCS or LDS pipe, the repairs should be submitted to the Regulators for review and approval. To address Ohio EPA Comment 19 and this comment, Line 34 on page 3-8 will be reworded to state, "The specific repair method to be selected will be submitted to the regulators for review and approval."

**Action:** Revise sentences as noted in the response.

**RESPONSES TO OHIO ENVIRONMENTAL PROTECTION AGENCY COMMENTS  
ON THE ON-SITE DISPOSAL FACILITY  
LEACHATE CONVEYANCE SYSTEM MODIFICATION**

CONSTRUCTION DRAWINGS

Commenting Organization: Ohio EPA  
Drawing #: Plan and Profile Sheet #: 1 of 3 Section #: Code: C  
Original Comment #: 1  
Comment: The guideposts referred to in Note 6 have not been installed.

Response: Noncomformance Report (NCR) FY99-0701, Rev. 0 was written on May 27, 1999, which addressed this comment. Guideposts were not installed due to little or no lateral support available from existing soils at the inlet and outlet of the existing storm culvert. Rip Rap at both ends including wrapping the pipe with HDPE liner to prevent gouging provided, equivalent or better "guidance." This will be incorporated into the "as-builts."

Action: Prepare as-built drawings to reflect above.

Commenting Organization: Ohio EPA  
Drawing #: Civil Details Sheet #: Section #: Code:  
Original Comment #: 2  
Comment: Detail 3 shows that the butterfly valve would remain. It has been removed and is no longer a part of the Interim Gravity Line (IGL). This valve would typically be "Locked and tagged" in the shut position before workers would enter to perform maintenance on the PLS. Without this valve, the valves at MH-1, MH-2, (and MH-3 after impacted materials are placed in Cell 3) plus the pump at the Equipment Wash sump will all have to be locked shut before workers enter the PLS. We predict that this butterfly valve will be seriously missed long before the IGL is replaced by the permanent line.

Response: Design Change Notice (DCN) 1700-091 was written to document the design change. Suspect couplings on the 6 inch and 10 inch piping were removed and replaced with butt fusion joints. We agree that individual valves at Leachate Conveyance System (LCS) Manholes 1, 2, and 3 and the pump at the equipment wash sump will have to be locked and tagged before entry into the Permanent Lift Station (PLS). This will be an inconvenience, but not unmanageable. The shut off valve and motor operated valve (MOV) within the PLS are being re-designed as part of the Permanent Leachate Conveyance System.

Action: Redesign shut off valve and MOV within the PLS as part of the Permanent Leachate Conveyance System.

Commenting Organization: Ohio EPA  
Drawing #: Civil Details Sheet #: Detail 11 Section #: Code:  
Original Comment #: 3  
Comment: The Plan shows that the IGL follows the centerline of the existing concrete trench with steel grating. The IGL was built so that it "snakes" to the east of the trench.

Response: Detail 11 is in essence a section at any location where the piping would be on top of the existing trench. The plan and profile drawings show the general "straight line" alignment with the "serpentine" areas and laying lengths identified. Actual pipe locations along the trench corridor will be shown on the "as-builts."

Action: Show actual pipe location on the as-built drawings and modify detail 11 to show pipe laid east of trench.

Commenting Organization: Ohio EPA

Commentor: OFFO

Drawing #: Civil details Sheet #: Detail 11 Section #:

Code:

Original Comment #: 4

Comment: Note 2 states that 80 mil HDPE liner will be placed over the trench. The IGL as built does not include the liner.

Response: The 80 mil HDPE liner was installed in areas where the pipe was on or near the existing trench. Cover material including HDPE placement on portions of the trench started on June 1, 1999 and was completed about June 15, 1999.

Action: No action required.

Commenting Organization: Ohio EPA

Commentor: OFFO

Drawing #: Plan and Profile Sheet #: 3 of 3 Section #:

Code:

Original Comment #: 5

Comment: The dumped rock fill was not placed as specified in the enlarged plan on this sheet.

Response: The dumped rock fill was placed near Manhole 3, as indicated on the enlarged plan shown on the reference sheet. The dumped rock fill was placed on May 26, 1999.

Action: No action required.

Commenting Organization: Ohio EPA

Commentor: OFFO

Drawing #: Plan and Profile Sheet #: 1 of 3 Section #:

Code:

Original Comment #: 6

Comment: The sheet does not show the rip rap that was placed at both the north and south ends of the RIMIA culvert.

Response: Agree.

Action: Update as-built drawings to show rip rap at north and south ends of RIMIA culvert. (Also see response to Comment 1 above.)

SPECIFICATIONS SECTION 02955 PIPE LINING

Commenting Organization: Ohio EPA

Commentor: OFFO

Section #: 2.01B

Pg. #: 02955-5

Line #:

Code:

Original Comment #: 7

Comment: The specifications call for "...a neat, tight-fitting installation." The installer was not able to accommodate the varying internal diameters of both the SDR 11 and the SDR 26 pipe. The slightly smaller i.d. of the SDR 11 pipe prevented the liner from completely flattening out. The liner has a fold which looked to be over one inch high in the photographs we saw. We await the results of calculations to show if the pipe will still carry the design flows.

Response: Agree. Nonconformance Report (NCR) FY99-0755, Rev. 0, was written on May 23, 1999, which addressed this comment. Part of the NCR included calculations that indicated a flow capacity of at least 127 gallons per minute in the gravity line between LCS Manhole 1 and 2 and LCS Manhole 2 and 3 (design criterion is 200 gallons per minute). It is DOE's intention to replace the Leachate Conveyance System piping between Manholes 1 and 2 and between Manholes 2 and 3.

Action: Replace the Leachate Conveyance System piping as noted in the response.

Commenting Organization: Ohio EPA

Commentor: OFFO

Section #: 2.02B

Pg. #: 02955-6

Line #:

Code:

Original Comment#: 8

Comment: The liner material procured by the contractor did not contain carbon black as required. Unless a convincing technical argument can be made that the polymer has an expected life consistent with the design criteria package, the system from Manhole 1 to Manhole 3 should be replaced as part of the construction of the permanent leachate system.

Response: Agree. Nonconformance Report (NCR) FY99-0757, Rev. 0 was written on May 20, 1999. Part of the NCR corrective action included a memorandum from Geosyntec Consultants, which addressed the fact that the U-liner supplied has a proprietary UV energy stabilizer in lieu of carbon black. The manufacturer's literature indicates a design life of 50 years. Geosyntec was tasked with evaluating the repair of the LTS between Manholes 1 to 3 for use as a permanent system, which included evaluation of expected life of the U-liner. However, it is DOE's intention to replace the Leachate Conveyance System piping between Manholes 1 and 2 and between Manholes 2 and 3.

Action: Replace the Leachate Conveyance System piping as noted in the response.

Commenting Organization: Ohio EPA

Commentor: OFFO

Section #: 3.03

Pg. #: 02955-9

Line #: Item K

Code: C

Original Comment #: 9

Comment: Provide a description of the end terminations. We are particularly interested in how the "folds" in the liner were sealed.

Response: Nonconformance report (NCR) FY-99-0755 Rev. 0 includes details of the end termination of the U-liner. These details include extrusion welding of the pipe to flat stock HDPE at the terminations of the U-liner. The flat stock was shaped to fit the U-liner configuration and butt-fused to the piping. The termination details will be shown on the "as-builts."

Action: Show termination details on "as-built" drawings.

Commenting Organization: Ohio EPA

Commentor: OFFO

Section #: 3.05

Pg. #: 02955-10

Line #: Item A

Code: C

Original Comment #: 10

Comment: During the construction meeting on May 21, 1999 the sliplining contractor expressed reluctance to pressure test at 50 psi because of concerns of point loads on the liner at the clean outs. A pressure test of 15 psi was eventually settled on. The Package as submitted does not make note of the absence of the cleanouts at the up-gradient end of each manhole. The inability to access the cleanouts without compromising the integrity of the liner will be another consideration when determining if the repairs meet the design criteria.

Response: Agree. The cleanouts at Manholes 2 and 3 were rendered inoperable by installing the U-liner; however, Manhole 1 has a cleanout incorporated with the vent pipe, (i.e., access to the piping between Manholes 1 and 2). The piping between Manholes 2 and 3 is accessible by removing the "spool" in either of these manholes, if access is needed. The 15 psi testing was documented in NCR FY99-0758, Rev. 0 and is deemed sufficient for the interim line. DOE's intention is to replace the Leachate Conveyance System piping between Manholes 1 and 2 and between Manholes 2 and 3.

Action: Replace the Leachate Conveyance System piping as noted in the response.

#### HDPE PIPES AND FITTINGS SECTION 02605A

Commenting Organization: Ohio EPA

Commentor: OFFO

Section #: 3.04

Pg. #: 02955-5

Line #: 3.04B.2.a

Code: C

Original Comment #: 11

Comment: The specifications state that the pipe is to be tested prior to placing fill over the pipe. Some sections of the pipe were covered prior to testing.

Response: All piping excluding the U-liner was preliminarily tested with air before placing backfill. This was to provide confidence prior to the final hydrostatic testing. DCN 1700-033 allows the testing of piping after backfilling at the contractor's risk.

Action: No action required.

Commenting Organization: Ohio EPA

Commentor: OFFO

Section #: 3.04

Pg. #: 02955-5

Line #:

Code: C

Original Comment #: 12

Comment: This section does not mention the pneumatic soap test of all butt fusion joints.

Response: Agree. The pneumatic soap test is the contractors option to perform as a preliminary test prior to the specified final hydrostatic test. Also see response to comment 11 above.

Action: No action required.

SYSTEMS PLAN

Commenting Organization: Ohio EPA

Commentor: OFFO

Section #: 3.1

Pg. #: 3-1

Line #: 21

Code: C

Original Comment #: 13

Comment: Provide a copy of the Leachate Conveyance System Operation, site procedure 43-C-365 to Ohio EPA.

Response: A draft copy of the procedure has been provided. A copy of the current revised procedure is included with this submittal.

Action: Provide copy of current revised procedure with this submittal.

Commenting Organization: Ohio EPA

Commentor: OFFO

Section #: 3.2

Pg. #: 3-2

Line #: 36

Code: C

Original Comment #: 14

Comment: Has the set point for the liquid alarm in the LCS manhole been adjusted from the 2 inches specified in this Plan?

Response: The alarm set points for Manholes 1 and 3 are set at 0.2 feet (approximately 2 inches). The alarm set point for Manhole 2 was temporarily set above the 2-inch specification to allow for the infiltration problem in the LTS outer containment pipe between Manholes 1 and 2. The higher set point prevented a continuous alarm condition at the manhole. All alarm set points, including Manhole 2 are in the process of being reset and recalibrated to the specification as a post repair action to the lines between the manholes. This work will be completed by the end of July 1999.

As a separate but related topic, the Systems Plan as written presumes an indication system calibrated in inches is installed in the manholes. In fact, a system calibrated in tenths of feet is installed. In order to allow for the current installation, or installations in the future, to comply with the intent of the 2-inch value, the word "approximately" should be added prior to the 2-inch specification in all applicable sections of the Plan. These are: Section 3.2, page 3-2, line 36; Section 3.3, page 3-5, line 14 and page 3-6, line 17; and Section 3.7, page 3-16, line 42.

Action: Revise Systems Plan as noted in response.

Commenting Organization: Ohio EPA

Commentor: OFFO

Section #: 3.2

Pg. #: 3-3

Line #: 22 and 27

Code: C

Original Comment #: 15

Comment: Delete these two bulleted items. They refer to the temporary line which will not be used again.

Response: The two bullets that refer to the temporary line will be deleted.

Action: Delete two bullets on page 3-3, lines 22 and 27, of the Systems Plan that refer to the temporary line.

Commenting Organization: Ohio EPA

Commentor: OFFO

Section #: 3.2

Pg. #: 3-6

Line #: 5

Code: C

Original Comment #: 16

Comment: It is not clear why the cell operation subcontractor should need to request that the normally-closed redundant LCS carrier pipe valve should be opened. The AWWT crew charged with operating the interim gravity line should be empowered to make these determinations.

Response: The sentence will be changed to the following, "The valve on the redundant LCS carrier pipe shall normally be maintained closed unless otherwise directed by the Operations manager."

Action: Revise sentence as noted in the response.

Commenting Organization: Ohio EPA

Commentor: OFFO

Section #: 3.2

Pg. #: 3-6

Line #: 15

Code: C

Original Comment #: 17

Comment: The phrase "as soon as practicable" should be replaced with something more specific such as "the next daytime shift where maintenance personnel are scheduled to work" or similar language. Our intent here is not to be overly restrictive while at the same time reducing ambiguity.

Response: The sentence will be revised to state, "...; liquids that accumulate in these manholes must be removed as soon as the source of the liquid is determined and personnel and equipment are available to safely perform the removal during day light hours. The ..."

Action: Revise sentence as noted in response.

Commenting Organization: Ohio EPA

Commentor: OFFO

Section #: 3.4

Pg. #: 3-7

Line #:

Code: C

Original Comment #: 18

Comment: Page 3-7 is blank except for the section number and title. The text on page 3-8 begins "The LCS and LDS shall be inspected and maintained in accordance with the schedule and activity requirements outlined in Table 3-1..." Do we have a complete copy of the text?

Response: This was a formatting problem in the copy provided for review. Section number 3.4 and the title is the header for the next page. The copy is complete.

Action: Reformat final document as noted.

Commenting Organization: Ohio EPA

Commentor: OFFO

Section #: 3.4

Pg. #: 3-8

Line #: 21

Code: C

Original Comment #: 19

Comment: If major repairs are needed to the LCS or LDS pipe, the repairs should be submitted to the Regulators for review and approval.

Response: Line 34 on page 3-8 will be reworded to state, "The specific repair method to be selected will be submitted to the regulators for review and approval."

Action: Revise sentence as noted in the response.



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Commenting Organization: Ohio EPA

Commentor: OFFO

Section #: 3.5

Pg. #: 3-11

Line #:

Code: C

Original Comment #: 20

Comment: This section should contain a commitment to comply with the Ohio ARAR requiring that a contingency plan for leachate management be developed in the event of problems with the IGL.

Response: A commitment to comply with the Ohio ARAR requiring that a contingency plan for leachate management be developed in the event of problems with the Interim Leachate Conveyance System line will be added to the Systems Plan in Section 3.2, Basic System Operation (rather than Section 3.5).

Action: Revise Section 3.2 as noted in the response.

Commenting Organization: Ohio EPA

Commentor: OFFO

Section #: 3.6

Pg. #: 3-16

Line #: 27

Code: C

Original Comment #: 21

Comment: This commitment to correct deficiencies using a procedure is too vague.

Response: These items are all inspection requirements that indicate proper operation or performance of the system and it's material condition. The action to be taken for any deficiency found in the parameters examined are contained in FDF Standard Operating and Operations Administration procedures (Standing Orders). The sentence will be reworded to state, "Should any ..... utilizing approved FDF Operations, Maintenance and Administrative procedures."

Action: Revise sentence as noted in the response.

Commenting Organization: Ohio EPA

Commentor: OFFO

Section #: 3.7

Pg. #: 3-17

Line #: 4

Code: C

Original Comment #: 22

Comment: Insert language here to commit to a time frame to respond to alarms.

Response: The sentence will be revised to state, "Personnel shall respond to the alarm within one shift to assess the problem and to take appropriate corrective actions." This statement will also be inserted in Section 3.2, page 3-6, line 18.

Action: Revise sentence as noted in the response and also insert into Section 3.2, page 3-6 at line 18 of the Systems Plan.

#### HYDROSTATIC PIPE TEST PROCEDURE

Commenting Organization: Ohio EPA

Commentor: OFFO

Section #: Table 1

Pg. #: 5

Line #:

Code:

Original Comment #: 23

Comment: This table contains allowances for expansion under test pressure. The table appears to be a "one size fits all" approach. It does not specify different allowances for pipes with different wall thicknesses nor does it allow for different test pressures. Since a pipe will expand more as both test pressure and SDR increase, provide justification that the test is appropriate for both the test pressures used.

Response: The allowances in the table are for expansion after the initial expansion or stabilization phase at whatever test pressure is being used. The stabilization phase is to account for the test pressure and SDR.

Action: No action required.

#### PNEUMATIC PIPE TEST PROCEDURE

Ohio EPA has no comments on this.

#### ADDENDUM TO FINAL DESIGN CRITERIA PACKAGE

Commenting Organization: Ohio EPA  
 Section #: 2.0 Pg. #: 4 of 6 Line #: 2<sup>nd</sup> bullet Commentor: OFFO  
 Original Comment #: 24 Code: C  
 Comment: The sentence that begins "Electrofusion couplings should only ..." should be deleted.

Response: Agree. Electrofusion couplings were not used for the construction of the Interim Leachate Conveyance System. This sentence will be deleted from the Addendum to the Final Design Criteria Package for the Interim Leachate Conveyance System.

Action: Delete sentence from the Addendum to the Final Design Criteria Package as noted in the response.

#### CALCULATIONS PACKAGE

Commenting Organization: Ohio EPA  
 Section #: Pg. #: Line #: Commentor: OFFO  
 Original Comment #: 25 Code:  
 Comment: The calculation "Estimation of installed length of pipe" by GeoSyntech assumes a pipe temperature of 100 degrees F. Ohio EPA observed measurements made by the Lee's tech rep with an infrared thermometer the indicated a pipe temperature of 120 degrees F on a sunny day with an ambient temperature in the low 70's. He informed us that a pipe temperature the previous day was 140 degrees F. Using the measured temperature and the same night temperature, you get a delta T of 90 degrees F instead rather than the 50 degrees F used by GeoSyntech. The calculated delta L now becomes 1.08 feet per 100 feet of pipe. Call it 101.1 feet of pipe required.

Going to the "Snake configuration" calculation, a "snake off-set" of 4 feet corresponds to a pipe length of 101.27 feet. Using the given assumptions, a "snake off-set" of 4 feet appears more appropriate than the 3 feet estimated in the Package.

We acknowledge that the calculation is made using straight line and is the worst case. In the field, the pipe will have to bend in more gradual curves and the actual length as laid in the field will be longer than calculated. We expect that the 3 foot off-set will perform satisfactorily.

Since the pipe will be covered, the temperature variations are only relevant during construction.

Response: Agree that the off-set as constructed is acceptable.

Action: No action required.

Commenting Organization: Ohio EPA

Commentor: HSI GeoTrans

Section #: Appendix B Pg. #: B-3 Line #: 4

Code: C

Original Comment #: 26

Comment: The equation that is used in this calculation is for pipe that is fully supported by surrounding soil, which is not the case for the 6-inch diameter carrier pipe. Rather than this equation, Chart 14 on page 25 of the Driscopipe System Design Manual should have been used. This chart identifies the allowable pressure on an unsupported pipe. This chart indicates that the 6-inch SDR 26 pipe would buckle with an exterior pressure of only 8 psi, which is far less than the 17.2 psi that was calculated to be the critical pressure calculated on page B-3.

Response: This comment from HSI Geo Trans pertains to the DOE Report for On-Site Disposal Facility, Leachate Conveyance System, Leak Investigation Report, Gravity Line Section, April 1999 as per HSI Geo Trans. Therefore it is not specifically applicable to the Leachate Conveyance System Modification documents. This comment will be incorporated into the comments received on the Leak Investigation Report (Reference Letter, Thomas A. Schneider to Johnny Reising, "Comments on LTS Leak Investigation Report," dated June 9, 1999) and will be addressed in the response to those comments.

Action: This comment is applicable to the Leak Investigation Report and will be addressed with the comments received on that report.

Commenting Organization: Ohio EPA

Commentor: OFFO

Section #: Pg. #: Line #:

Code:

Original Comment #: 27

Comment: The calculations show that a 6 inch diameter pipe at the given slope will carry the design flow (200 gpm). Provide an estimate of flow for the pipe with the sliplining as built, that is with the sliplining folded at the where it could not conform tightly to the inside of the SDR 11 pipe.

Response: See response to Comment 7.

Action: See action on Comment 7.

Commenting Organization: Ohio EPA

Commentor: OFFO

Section #: Pg. #: Line #:

Code:

Original Comment #: 28

Comment: The design criteria package stated that pull lengths of the carrier pipe would be based on manufacturers recommendation. We could not find the pull length documented in the calculations package.

Response: Agree. The pull length of the carrier pipe was governed by ASTM F1804-97, which was part of the pipe specification. The contractor actually "pushed" the carrier pipe through sections of the containment pipe and butt-fused each section together.

Action: No action required.

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## LONG TERM ORDER TO SUPERVISORS AND PUMPERS

LONG-TERM ORDER NUMBER \_\_\_\_ - 40ISSUE DATE: June 9, 1999

CANCELLATION DATE: December 9, 1999

This Order Contains: ( X ) Action


( ) Information

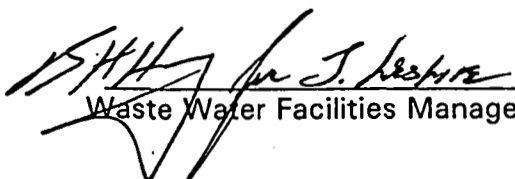
SUBJECT: Leachate Conveyance Gravity Drain System Monitoring of LDS/LCS Manholes

## REMARKS:

The Leachate Conveyance Gravity Drain System will be disrupted from approximately June 9, 1999 through June 30, 1999. The work to be accomplished includes removal of portions of Manhole #1 and #2 concrete slabs; relocation of solar panels and alarm control panels; excavation of ground in the vicinity of the LTS line couplings; and replacement of the couplings in the secondary containment pipe. Disruption of flow through the primary carrier pipe is not to occur. Once the couplings are replaced, the secondary containment pipe will be hydrostatically tested and the system will be restored. During the period of this disruption procedure 43-C-365, Rev 1, PCN-1 of 6/4/99 will be modified as stated on the attached OWI.

## APPROVALS:

  
\_\_\_\_\_  
Process Engineer 6/9/99

  
\_\_\_\_\_  
Waste Water Facilities Manager Date

  
\_\_\_\_\_  
Operations Manager Date 6/9/99

INFORMATION COPY

## OPERATING WORK INSTRUCTION

(All paragraph numbers refer to 43-C-365)

5.2.2 - Some of the water that is infiltrating into the LTS line between manhole 1 and 2 will leak out of the coupling joint when it is removed. There may still be water entering either manhole 1 or 2 caused from infiltration through the joint opening, construction water or possibly could indicate a primary to secondary leak.

**ACTION:** All water collected in LTS line stand pipes in manholes 1 or 2 will be sampled and pumped per section 6.2.3. Any changes in the pumping frequency or sample results will be further investigated.

6.2.1 - The action to remove and relocate the solar panels, batteries and control panels will disrupt the ability to monitor the alarms and perform those system checks specified for these components.

**ACTION:**

1. Modify the performance of listed system checks as follows:
  - A. Visual check of LDS/LCS alarm lights - deferred, mark Out of Service (OOS) on round sheets
  - C. Record LDS sump level indicator - deferred, mark Out of Service (OOS) on round sheets
  - D. Record LCS manhole level indicator - deferred, mark Out of Service (OOS) on round sheets
  - F. Battery test - deferred, mark Out of Service (OOS) on round sheets

2. In addition to the normal day and swing shift inspections, perform additional visual inspection of LDS/LCS manholes 1 and 2 by inspecting the interior of the manholes just prior to dark on second shift and just after dawn on third shift. Record the results in the narrative section of the log.

6.2.3 - Water may accumulate in both manholes from the construction effort instead of just manhole #2. The level probes will be disabled in both manholes.

**ACTION:**

1. Take a reading to the bottom of Manhole #1 and #2 with the M-scope instead of the local indicator and record the reading on the log
2. Pump the manholes dry using the methods of paragraph 6.2.3 when the level reaches an outage reading of 10 ft 7 inches.

**NOTE:** The M-scope reads in "outage". Since the total length of the scope to the bottom of the tank is approximately 11 ft 1 inch, a reading of 10 ft 7 inches will indicate approximately 6-8 inches of water in the bottom of the manhole.

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3. Determine and record the total gallons pumped by using the conversion:

Starting Reading (outage in inches) + 2 inches X 288 = \_\_\_\_\_ gallons  
12 inches

Example: 11 ft 1 inch to the bottom, minus 10 ft 7 inches to the water = 6 inches outage

6 inches + 2 inches X 288 = 192 gallons  
12 inches

6.3.1 - The LDS/LCS alarms will be disabled. The additional visual inspection to be performed at dusk and dawn specified in 6.2.1 will provide assurance an alarming condition will be detected by a watchstander in sufficient time to preclude overflowing the LDS sump or filling an LCS manhole.

Fernald Environmental Management Project Fluor Daniel Fernald, Inc. PSS Division Procedure System		Revision No. 1 Effective: 06/01/99 PCN No.: 1 PCN Effective: 06/04/99
ARWWP PROJECT PROCEDURE	Leachate System Operation INFORMATION COPY	43-C-365
		TECHNICAL PROCEDURE
Authorization: <u>EH</u> Ev Henry, Operations Manager	6/4/99 Date	Supersedes: None Page 1 of 16

{Direct questions concerning this procedure to the PTR, T. Arnold, X5774}

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RECORD OF ISSUE/REVISIONS**2383**

ISSUE AUTHORIZATION DATE	EFFECTIVE DATE	PCN NO.	REV. NO.	DESCRIPTION
NA	11/21/97		0	New procedure issued to describe process for operating the Leachate Conveyance System per Request No. P97-0390, initiated by R. Houchins.
NA	01/01/98	1	0	Page change on page 9 to add more information to the table per Request No. P98-0032, initiated by T. Arnold.
05/20/99	06/01/99		1	Procedure revised to include additional system components. Initiated by T. Arnold.
06/04/99	06/04/99	1		Section 6 changed to incorporate requirements for water infiltration into LCS line from manhole #1 to manhole #2, initiated by R Houchins

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**2383****1.0 PURPOSE**

- 1.1 The purpose of this document is to establish the procedure for operating the Leachate System to transport water from the On Site Disposal Facility (OSDF) to the Bio Surge Lagoon (BSL).

**2.0 SCOPE**

- 2.1 This procedure applies to operation of the Leachate Transfer System (LTS) including the LCS pipes from the OSDF cells to the LCS manholes, the LDS pipes from the OSDF cells to the LDS manholes, and the LTS header from the OSDF cells to the Permanent Lift Station. It also includes the Leachate Conveyance System (LCS) from the Permanent Lift Station to the BioSurge Lagoon (BSL).

**3.0 RESPONSIBILITIES**

- 3.1 Operator - Transfer leachate from the OSDF cells to the Permanent Lift Station to the BioSurge Lagoon.

**4.0 PREREQUISITES****4.1 Equipment And Materials**

- 4.1.1 M-Scope
- 4.1.2 Leachate System Round Sheet
- 4.1.3 Sample bottles
- 4.1.4 Horiba Meter
- 4.1.5 Containment vessel

**4.2 Requirements**

- 4.2.1 Valves are positioned in their normal operating positions according to Attachment B of this procedure. A baseline valve line-up shall be performed prior to initial start-up and after an extended shutdown of the system.
- 4.2.2 Round sheets will be reviewed by Supervisors and ARWWP Operations Managers daily.
- 4.2.3 Any circumstance which could have resulted in an intake of radioactive materials by inhalation, ingestion, or absorption shall immediately be reported to a Supervisor. The Supervisor shall immediately report the circumstance of possible radioactive materials intake to S&H Radiological Control Department for evaluation. When the suspect isotope is uranium, the involved personnel shall report to the Urine Sampling Station at the end of their shift to complete an Incident Investigation Report (IIR) (Form No. FS-F-1458), and submit an incident urine sample. The involved personnel shall also report to the Urine Sampling Station at the start of their next shift to submit a follow up urine sample. When the suspect isotope is other than uranium, the involved personnel shall report to the Dosimetry Section of the Radiological Control Department for further determination of actions. Employees are responsible for complying with additional requirements as specified by the Radiological Control Department.

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- 4.2.4 Any situation which could have resulted in the inhalation, ingestion, or absorption of a hazardous material shall immediately be reported to a Supervisor or to the Assistant Emergency Duty Officer (AEDO), who will immediately report the circumstances to Medical and Industrial Hygiene. The involved personnel shall be directed by the Supervisor or AEDO as to when and where to report for medical evaluation, completion of an Incident Investigation Report (IIR) (Form No. FS-F-1458), and submitting bioassay samples (e.g. blood, urine). Employees are responsible for complying with any additional requirements as specified by S&H.

## 5.0 PRECAUTIONS AND LIMITATIONS

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### 5.1 Precautions

- 5.1.1 Confined entry permits must be in place prior to entering a manhole
- 5.1.2 Personnel shall exercise appropriate caution when operating energized equipment during inclement weather.
- 5.1.3 Communications between AWWT Control Room and field operators shall be established prior to system startup.

### 5.2 Limitations

- 5.2.1 Spills or leakage outside the manholes or lift station shall be contained and then reported to the supervisor for evaluation prior to clean up.
- 5.2.2 The LTS line from OSDF Cell #1 to Cell #2 has a known leak that allows groundwater to seep into the secondary containment pipe. This water gravity flows to Cell #2 LCS manhole and accumulates in the stand pipe and the manhole. This water will be sampled and pumped per section 6.2.3. Any changes in the sample results or pumping frequency will be further investigated.

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## 6.0 PROCEDURE

**NOTE:** The following section may be applied as necessary to restart the system based on the portion of the system that has been shut down.

### 6.1 Initial Start-Up Or Start-Up Following Extended Shutdown

- 6.1.1 Perform Initial baseline valve Lineup verification of Attachment B. Establish communication with AWWT Operator.
- 6.1.2 Verify Electrical Power is available to the pumps at the Lift Station (green Run Permissive Light lighted) and both pump switches are in OFF.
- 6.1.3 Verify Leak Detection alarm at OSDF manholes are not activated (Yellow rotating beacon at cell manholes).
- 6.1.4 Record appropriate data on Leachate System Round Sheet.
- 6.1.5 At the lift station, verify Pump Seal Failure alarm is not activated (Red rotating beacon on top of pump control cabinet).

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6.1.6 At the lift station, take pump 1 switch to HAND. Observe pump start and check for vibration or unusual noise. Take pump 1 switch to OFF. **2383**

6.1.7 At the lift station, take pump 2 switch to HAND. Observe pump start and check for vibration or unusual noise. Take pump 2 switch to OFF.

**Note:** Operation of the pumps in AUTO is dependent on water level in the Lift Station and the sequence of previous operation, if any. If sufficient level is present, both pumps may start immediately upon taking the respective switch to AUTO. If a significant quantity of water is present in the Lift Station and NEITHER pump starts when the switch is placed in AUTO, contact the Supervisor for direction.

6.1.8 Turn both pump switches to AUTO.

**CAUTION**

Do not leave pumps in hand. Hand operation defeats the automatic level control system and the pump(s) will run dry causing possible damage.

6.1.9 If a pump turns on, verify with the AWWT operator that flow is being registered in the Control Room.

6.1.10 Record appropriate data on Leachate System Round Sheet.

**6.2 Normal System Operation**

6.2.1 Complete the following system checks and record on Leachate System Round Sheets:

- A. Visual check of alarm lights (each shift)
- B. Visual check of inside of LDS and LCS manholes (daily on first or second shift)
- C. Record LDS Primary containment sump level indicator value (daily on first or second shift)
- D. Record LCS manhole level indicator value (daily on first or second shift)
- E. M-Scope measurement of depth to water in the stand pipes (weekly on first or second shift)
- F. Battery Test (daily on first or second shift)
- G. Lift Station permissive light (each shift)
- H. Lift Station pump switches (each shift)
- I. Lift Station Indicating lights (each shift)
- J. Lift Station annular space hatch (daily on first or second shift)
- K. Record and compare manhole 1 and manhole 11 flow meters (weekly on first or second shift)

6.2.2 The LDS containment sump will be pumped per the following when the level reaches 3 feet or the alarm indicator is lit:

**CAUTION****2383**

If the motor operated valve is closed, water may back up in the transfer line and may overflow the LDS vent pipe when the LDS block valve is opened.

- A. Open the designated LDS transfer valve V-102, V-202, or V-302.
- B. IF water overflows the vent line when the block valve is opened, THEN
  1. Close the block valve.
  2. Obtain a container with a volume of at least 150 gallons to collect the water, OR
  3. Contact the supervisor to schedule the vacuum truck to pump the containment sump
  4. Decon a stainless steel sampling bucket per the following:
    - a. Don new, clean disposable glove
    - b. Allow equipment to soak in potable or deionized water to soften contamination.
    - c. Remove contamination with a stiff brush.
    - d. Place a solution of phosphate-free detergent and potable or deionized water in the bucket.
    - b. Clean all surfaces using a polyethylene brush, ensuring all surfaces are thoroughly decontaminated.
    - c. Drain detergent solution.
    - d. Inspect all surfaces of equipment for visible contamination.
    - e. If visible contamination is present then repeat steps 1 - 6.
    - f. Rinse bucket with potable or deionized water using polyethylene brush or gloved hand.
    - g. Drain rinse water from bucket.
    - h. Repeat Step i twice.
    - i. Dry equipment with disposable wipes.
    - j. Ensure all surfaces are dry.
    - k. Place bucket on a clean dry surface
- C. Take a starting M-Scope reading from the top of the manhole to the water level in the containment sump and record on Leachate System Round sheet.
- D. IF not using the vacuum truck, THEN Connect the tubing to the peristaltic pump and begin pumping to the LDS vent line or the container.
- E. Using the sample valve on the tubing or the sampling bucket, take a sample per the following chart:

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Analyses	Container	Amount	Preservative
Total Uranium	Poly	1 qt	HNO <sub>3</sub> , pH < 2
pH DO Temperature Turbidity & Specific Conductance	Use Horiba Meter per 43-C-104	As needed	None

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- F. 0-Record field parameter readings from the Horiba meter on the Leachate System Round Sheet.
- G. Take an ending M-Scope reading from the top of the manhole to the water level in the containment sump and record on Leachate System Round sheet.
- H. Shut the designated LDS transfer valve V-102, V-202, or V-302.
- I. IF a container was used, THEN discharge the container into the Lift Station.
- J. Turn the Total Uranium sample into the AWWT Process Control Lab for analysis.
- 6.2.3 The LCS manhole at Cell #2 will be pumped using the peristaltic pump or the vacuum truck when the level reaches 0.5 feet or the alarm indicator is lit per the following:
- A. Take a starting level indicator reading and record on Leachate System Round sheet.
- B. IF not using the vacuum truck, THEN Connect the tubing to the peristaltic pump and begin pumping to the LDS vent line.

**CAUTION**

If the motor operated valve is closed, water may back up in the transfer line and may overflow the LDS vent pipe when the LDS block valve is opened.

- C. Open the designated LDS transfer valve V-102, V-202, or V-302.
- D. IF water overflows the vent line when the block valve is opened, THEN
1. Close the block valve.
  2. Contact the supervisor to schedule the vacuum truck to pump the containment sump
  3. Decon a stainless steel sampling bucket per the following:
    - a. Don new, clean disposable glove
    - b. Allow equipment to soak in potable or deionized water to soften contamination.
    - c. Remove contamination with a stiff brush.
    - d. Place a solution of phosphate-free detergent and potable or deionized water in the bucket.
    - e. Clean all surfaces using a polyethylene brush, ensuring all surfaces are

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thoroughly decontaminated.

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- m. Drain detergent solution.
- n. Inspect all surfaces of equipment for visible contamination.
- o. If visible contamination is present then repeat steps 1 - 6.
- p. Rinse bucket with potable or deionized water using polyethylene brush or gloved hand.
- q. Drain rinse water from bucket.
- r. Repeat Step i twice.
- s. Dry equipment with disposable wipes.
- t. Ensure all surfaces are dry.
- u. Place bucket on a clean dry surface.

- E. Using the sample valve on the tubing or the sampling bucket, take a sample per the following chart and record:

Analyses	Container	Amount	Preservative
Total Uranium	Poly	1 qt	HNO <sub>3</sub> , pH < 2

- F. Record sample number on Leachate System Round sheet.
- G. Take an ending level indicator reading and record on Leachate System Round sheet.
- H. Record the number of gallons pumped on the Leachate System Round sheet per the following equation:  
 Subtract the ending level reading from the starting level reading and multiply times 288  
 (Example:  $0.5 - 0.1 = 0.4$   
 $0.4 * 288 = 115$  gallons of water)
- I. Shut the designated LDS transfer valve V-102, V-202, or V-302.
- J. IF a vacuum truck was used, THEN discharge the container into the Lift Station.
- K. Turn the Total Uranium sample into the AWWT Process Control Lab for analysis.

### 6.3 Abnormal System Operation

- 6.3.1 **LDS/LCS System Alarm** - An alarm in this portion of the system may indicate the LDS containment sump is full (3.0 feet on the indicator) or water in the LCS manhole (0.2 feet on the indicator in #1 and #3 or 0.5 feet in #2). In the event of an alarm, the operator will determine the cause and will contact the AWWT Supervisor. The Supervisor will contact the ARWWP Operations Manager..

**Note:** A seal failure alarm may require the affected pump to be secured and a high lift station level could be caused by loss of power or a casualty to the pumps. A high flow differential, however, is an indication the pumps are running but less than required flow is exiting the discharge at the BSL. This alarm may require an inspection of the entire Conveyance System through the COMH manways to determine if a leak has occurred in the lines. The

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AWWT operator should notify the Supervisor who will dispatch an appropriate vehicle to remove collected Leachate from the affected manway.

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- 6.3.2 **Lift Station System Alarms** - Alarms in the Lift Station System include high lift station level, pump seal failure, and loss of power to the indication and alarm circuit which sound individually at the Lift Station with a common alarm in the AWWT Control Room. A separate alarm is provided for a low flow (high flow differential) which alarms in the AWWT Control Room only. Any alarm in the Control Room requires on shift personnel to Notify the Supervisor who will direct the appropriate response to the Lift Station to determine and rectify the source of the alarm.
- 6.3.3 **Stand Pipe Water Detection** - Any detection of water in an LDS or LCS stand pipe may indicate a leak in the interior carrier pipe. In the event of a detection, the operator will note the time, water level, and stand pipe on the Leachate System Round sheet and immediately notify the Supervisor. The Supervisor will contact the ARWWP Operations Manager. Follow-up monitoring will be scheduled in order to track the potential leak rate. Water in the LTS stand pipe in Cell #2 LCS manhole is expected. Leak monitoring for this manhole will be completed by trending the accumulation rate in the manhole and identifying any major changes.

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## 7.0 APPLICABLE DOCUMENTS

### 7.1 Drivers

- 7.1.1 None.

### 7.2 Reference Documents

- 7.2.1 None.

### 7.3 Information Sources

- 7.2.1 FERMCO Manual 2505-OM-001, "Operations and Maintenance Master Plan for the Aquifer Restoration and Wastewater Treatment Project"
- 7.2.2 43-C-104, "Horiba Water Quality Meter Calibration, Operation, And Maintenance"

### 7.4 Forms

- 7.4.1 FS-F-1458, Incident Investigation Report (IIR)

### 7.5 Records

- 7.5.1 The following records are generated as a result of performing the activities in this procedure:

- A. Leachate System Round Sheet
- B. Base Line Valve Lineup

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**8.0 DEFINITIONS****2383**

- 8.1 AWWT - Advanced Waste Water Treatment facility which provides uranium removal to FEMP wastewater, groundwater and storm water.
- 8.2 Distributed Control System (DCS) - A Computer-Based Operator Station for operating the AWWT from the Control Room.
- 8.3 Leachate- Leached and storm runoff water that percolates through the Impacted Material Disposal cell to the underlying collection and conveyance system. Leachate is NOT surface storm water runoff that is collected in runoff basins.
- 8.4 Leachate Conveyance System- A two part system (Gravity Drain and Force Main) constructed for the purpose of conveying leachate from the OSDF to the BSL for further treatment in the AWWT. The gravity drain portion of the system consists of collection piping grids distributed in the base of each OSDF cell; individual cell monitoring and inspection manholes (LCS); a Leachate Detection System (LDS) used for the purpose of monitoring geosynthetic liner performance and associated piping and valves. The force main portion of the system contains a collection and lift station, two 200 gpm submersible pumps, associated piping and valves and flow monitoring instrumentation to carry the leachate to the Bio Surge lagoon.



**ATTACHMENT A**  
**LEACHATE SYSTEM ROUND SHEET (Page 1 of 2)**

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3<sup>rd</sup> Shift Operator: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Cell / Manhole	CELL #1	CELL #2	CELL #3
LDS	Alarm / OK	Alarm / OK	Alarm / OK
LCS	Alarm / OK	Alarm / OK	Alarm / OK
LIFT STATION	Pump run permissive light	ON / OFF	
	Pump #1 H-O-A Switch	HAND OFF AUTO	
	Pump #2 H-O-A Switch	HAND OFF AUTO	
	Indicating lights (push to test)		
	Annular space hatch	WET / DRY	

1<sup>ST</sup> Shift Operator: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Cell / Manhole	EQUIPMENT	CELL #1	CELL #2	CELL #3
LDS	Alarm Light	Alarm/OK	Alarm/OK	Alarm/OK
	Battery Test	Good / Bad	Good / Bad	Good / Bad
	Manhole	Wet / Dry	Wet / Dry	Wet / Dry
	Level Indicator			
	Containment Pipe Level (weekly)			
LCS  (Empty standpipe measures 11.1ft)	Alarm Light	Alarm/OK	Alarm/OK	Alarm/OK
	Battery Test	Good / Bad	Good / Bad	Good / Bad
	Manhole	Wet / Dry	Wet / Dry	Wet / Dry
	Level Indicator			
	Cont. Pipe Level (weekly)			
	Redund. Cont. Pipe level (weekly)			
	LTS Cont. Pipe Level (weekly)			
Lift Station	Pump run permissive light			
	Pump #1 H-O-A Switch			
	Pump #2 H-O-A Switch			
	Indicating lights (push to test)			
	Annular space hatch			
	LTS Cont. Pipe level (weekly)			
	Flow Differential (weekly)			

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**ATTACHMENT A**  
**LEACHATE SYSTEM ROUND SHEET (Page 2 of 2)**

**2383**2<sup>nd</sup> Shift Operator:

Date:

Time:

Cell / Manhole	EQUIPMENT	CELL #1	CELL #2	CELL #3
<b>LDS</b>	Alarm Light	Alarm/OK	Alarm/OK	Alarm/OK
	Battery Test	Good / Bad	Good / Bad	Good / Bad
	Manhole	Wet / Dry	Wet / Dry	Wet / Dry
	Level Indicator			
	Cont. Pipe Level (weekly)			
<b>LCS</b> (Empty standpipe measures 11.1 ft)	Alarm Light	Alarm/OK	Alarm/OK	Alarm/OK
	Battery Test	Good / Bad	Good / Bad	Good / Bad
	Manhole	Wet / Dry	Wet / Dry	Wet / Dry
	Level Indicator			
	Cont. Pipe Level (weekly)			
	Redund. Cont. Pipe level (weekly)			
	LTS Cont. Pipe Level (weekly)			
<b>Lift Station</b>	Pump run permissive light			
	Pump #1 H-O-A Switch			
	Pump #2 H-O-A Switch			
	Indicating lights (push to test)			
	Annular space hatch			
	LTS Cont. Pipe level (weekly)			
	Flow differential (weekly)			

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**LDS Pump Log**

<b>Cell #:</b>		<b>Date:</b>		<b>Time:</b>		
<b>Mscope</b>		<b>Horiba Meter Readings</b>				
<b>Start</b>	<b>Stop</b>	<b>pH</b>	<b>DO</b>	<b>Temp</b>	<b>Turbidity</b>	<b>Specific Conductance</b>

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**ATTACHMENT B**  
**BASE LINE VALVE LINEUP (Page 1 of 3)**

**2383****LEACHATE TRANSFER SYSTEM**

Valve No.	Description / Location	Required Position	Verification
V-101	LDS#1 Containment monitor valve	OPEN	
V-110	LDS#1 stand pipe sample valve	SHUT	
V-111	LDS#1 manual block valve	SHUT	
V-103	LCS#1 Redund. Contnmt. monitor valve	OPEN	
V-112	LCS#1 Redund. Stand pipe sample valve	SHUT	
V-104	LCS#1 Redund. carrier pipe sample valve	SHUT	
V-105	LCS#1 Redund. Block Valve	SHUT*	
V-106	LCS#1 Redund. Contnmt. monitor valve	OPEN	
V-113	LCS#1 Stand pipe sample valve	SHUT	
V-107	LCS#1 carrier pipe sample valve	SHUT	
V-108	LCS#1 Block Valve	REGULATE*	
V-109	LCS#1 check valve	N/A	
V-201	LDS#2 Containment monitor valve	OPEN	
V-210	LDS#2 stand pipe sample valve	SHUT	
V-211	LDS#2 manual block valve	SHUT	
V-203	LCS#2 Redund. Contnmt. monitor valve	OPEN	
V-212	LCS#2 Redund. Stand pipe sample valve	SHUT	
V-204	LCS#2 Redund. carrier pipe sample valve	SHUT	
V-205	LCS#2 Redund. Block Valve	SHUT	
V-206	LCS#2 Redund. Contnmt. monitor valve	OPEN	
V-213	LCS#2 Stand pipe sample valve	SHUT	
V-207	LCS#2 carrier pipe sample valve	SHUT	
V-208	LCS#2 Block Valve	REGULATE	

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**ATTACHMENT B**  
**BASE LINE VALVE LINEUP (Page 2 of 3)**

**2383****LEACHATE TRANSFER SYSTEM (cont.)**

V-209	LCS#2 check valve	N/A	
V-214	LCS#2 LTS Cont. sample valve	SHUT	
V-301	LDS#3 Containment monitor valve	OPEN	
V-310	LDS#3 stand pipe sample valve	SHUT	
V-311	LDS#3 manual block valve	SHUT	
V-303	LCS#3 Redund. Contnmt. monitor valve	OPEN	
V-312	LCS#3 Redund. Stand pipe sample valve	SHUT	
V-304	LCS#3 Redund. carrier pipe sample valve	SHUT	
V-305	LCS#3 Redund. Block Valve	SHUT	
V-306	LCS#3 Redund. Contnmt. monitor valve	OPEN	
V-313	LCS#3 Stand pipe sample valve	SHUT	
V-307	LCS#3 carrier pipe sample valve	SHUT	
V-308	LCS#3 Block Valve	REGULATE*	
V-309	LCS#3 check valve	N/A	
V-314	LCS#3 LTS Cont. sample valve	SHUT	
V-LS1	Lift Station LTS cont. sample valve	SHUT	

\* Valves are positioned to regulate flow to approximately 200gpm at the lift station as directed by Process Engineer.

**ATTACHMENT B**  
**BASE LINE VALVE LINEUP (Page 3 of 3)**

**2383****LEACHATE CONVEYANCE SYSTEM**

VALVE NO.	DESCRIPTION / LOCATION	REQUIRED POSITION	VERIFICATION REQUIRED
LCS-910	MANUAL LIFT STATION ISOLATION	N/A	
LCS-MV001	MOTOR OPERATED LIFT STATION ISOLATION	OPEN	
LCS-100	PUMP #1 DISCHARGE VALVE	OPEN	
LCS-101	PUMP #2 DISCHARGE VALVE	OPEN	
LCS-PI 125	PRESSURE INSTRUMENT PI-110 ISOLATION	OPEN	
LCS-124	HOSE CONNECTION	SHUT	
LCS-126	AIR RELEASE VALVE	OPEN	
LCS-102	CLEAN OUT VALVE COMH-1A	SHUT	
LCS-123	FLOW METER MAINTENANCE DRAIN	SHUT	
LCS-103	CLEAN OUT VALVE COMH-2	SHUT	
LCS-104	CLEAN OUT VALVE COMH-3	SHUT	
LCS-105	CLEAN OUT VALVE COMH-4	SHUT	
LCS-107	EMERGENCY BYPASS TO SWRB	LOCKED SHUT	
LCS-106	FORCE MAIN ISOLATION	OPEN	
LCS-108	CLEAN OUT VALVE COMH-5	SHUT	
LCS-120	AIR RELEASE VALVE	OPEN	
LCS-109	CLEAN OUT VALVE COMH-6	SHUT	
LCS-110	CLEAN OUT VALVE COMH-7	SHUT	
LCS-111	CLEAN OUT VALVE COMH-8	SHUT	
LCS-112	CLEAN OUT VALVE COMH-9	SHUT	
LCS-113	CLEAN OUT VALVE COMH-10	SHUT	
LCS-118	CLEAN OUT VALVE COMH-11	SHUT	
LCS-119	CLEAN OUT VALVE COMH-12	SHUT	

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Remarks:

 Reviewed: \_\_\_\_\_  
 Supervisor

Date \_\_\_\_\_

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